CLAIMS

1.   A method for protecting digital images distributed over a network, comprising the steps of:

        receiving a request from a client computer running a network browser, for an original layout page containing references to digital images therein;

        parsing the original layout page for the references to digital images;

        generating a modified layout page from the original layout page by replacing at least one of the references to digital images in the original layout page with references to substitute data; and

        sending the modified layout page to the client computer.

2.   The method of claim 1 wherein the layout page is a hyper-text markup language (HTML) page.

3.   The method of claim 1 wherein the layout page is an extended markup language (XML) page.

4.   The method of claim 1 wherein the layout page is an active server page (ASP).

5.   The method of claim 1 further comprising the step of determining characteristics of the network browser used by the client computer to issue the request.

6.   The method of claim 5 wherein the substitute data referenced in the modified layout page depends on the characteristics of the network browser used by the client computer.

1   7.   The method of claim 1 wherein said parsing step comprises the steps of:

2   locating tags within the layout page indicating references to digital images; and

3   identifying protection status of the digital images, based on information in a

4   protection status database.

1   8.   The method of claim 1 wherein said parsing step comprises the steps of:

2   locating tags within the layout page delimiting protected parts of the layout

3   page;

4   extracting references to digital images within the protected parts of the layout

5   page; and

6   identifying protection status of the digital images, based on information in a

7   protection status database.

1   9.   The method of claim 1 wherein the substitute data is pre-defined data.

1   10.   The method of claim 9 wherein the pre-defined data is pre-defined text data.

1   11.   The method of claim 9 wherein the pre-defined data is pre-defined image

2 data.

1   12.   The method of claim 1 further comprising the step of deriving the substitute

2 data from the digital images.

1   13.   The method of claim 12 wherein the substitute data is watermarked data

2 derived from the digital images.

1   14.   The method of claim 12 wherein the substitute data is encrypted data

2 derived from the digital images using an encryption algorithm.

1   15. The method of claim 1 wherein at least one of the references to digital

2   images is a reference to an alias for a protected digital image.

1   16. The method of claim 15 further comprising the step of looking up a file name

2   for the protected digital image, corresponding to the alias for the protected digital

3   image.

1   17. The method of claim 15 wherein the protected digital image resides on a

2   remote computer.

1   18. The method of claim 17 further comprising the step of looking up an address

2   for the remote computer and a file name for the protected digital image, corresponding

3   to the alias for the protected digital image.

1   19. The method of claim 18 further comprising the steps of:

2   requesting protected digital image data from the remote computer, using the

3   address for the remote computer and the file name for the protected digital

4   image; and

5   receiving protected digital image data from the remote computer.

1   20. The method of claim 19 further comprising the step of deriving the

2   substitute data from the protected digital image data.

1   21. The method of claim 20 wherein the substitute data is watermarked data

2   derived from the protected digital image data.

1   22. The method of claim 20 wherein the substitute data is encrypted data

2   derived from the protected digital image data using an encryption algorithm.

1   23.   A system for protecting digital images distributed over a network,

2   comprising:

3   a receiver receiving a request from a client computer running a network browser,

4   for an original layout page containing references to digital images therein;

5   a layout page parser parsing the original layout page for the references to digital

6   images;

7   a layout page generator generating a modified layout page from the original

8   layout page by replacing at least one of the references to digital images in the

9   original layout page with references to substitute data; and

10   a transmitter sending the modified layout page to the client computer.

1   24.   The system of claim 23 wherein the layout page is a hyper-text markup

2   language (HTML) page.

1   25.   The system of claim 23 wherein the layout page is an extended markup

2   language (XML) page.

1   26.   The system of claim 23 wherein the layout page is an active server page

2   (ASP).

1   27.   The system of claim 23 further comprising a browser detector determining

2   characteristics of the network browser used by the client computer to issue the request.

1   28.   The system of claim 27 wherein the substitute data referenced in the

2   modified layout page depends on the characteristics of the network browser used by the

3   client computer. .

1   29. The system of claim 23 wherein said layout page parser comprises:

2   a tag locator locating tags within the layout page indicating references to digital

3   images; and

4   a protection status detector identifying protection status of the digital images,

5   based on information in a protection status database.

1   30. The system of claim 23 wherein said layout page parser comprises:

2   a tag locator locating tags within the layout page delimiting protected parts of

3   the layout page;

4   a digital image detector extracting references to digital images within the

5   protected parts of the layout page; and

6   a protection status detector identifying protection status of the digital images,

7   based on information in a protection status database.

1   31. The system of claim 23 wherein the substitute data is pre-defined data.

1   32. The system of claim 31 wherein the pre-defined data is pre-defined text data.

1   33. The system of claim 31 wherein the pre-defined data is pre-defined image

2   data.

1   34. The system of claim 33 further comprising a data processor deriving

2   substitute data from the digital images.

1   35. The system of claim 34 wherein the substitute data is watermarked data

2   derived from the digital images.

1   36. The system of claim 34 wherein the substitute data is encrypted data derived

2   from the digital images using an encryption algorithm.

1   39. The system of claim 23 wherein at least one of the references to digital

2   images is a reference to an alias for a protected digital image.

1   38. The system of claim 37 further comprising a file name index containing a file

2   name for the protected digital image corresponding to the alias for the protected digital

3   image.

1   39. The system of claim 37 wherein the protected digital image resides on a

2   remote computer.

1   40. The system of claim 39 further comprising an address and file name index

2   containing an address for the remote computer and a file name for the protected digital

3   image, corresponding to the alias for the protected digital image.

1   41. The system of claim 40 wherein said transmitter requests protected digital

2   image data from the remote computer, using the address for the remote computer and

3   the file name for the protected digital image, and wherein said receiver receives

4   protected digital image data from the remote computer.

1   42. The system of claim 41 further comprising a data processor deriving

2   substitute data from the protected digital image data.

1   43. The system of claim 42 wherein the substitute data is watermarked data

2   derived from the protected digital image data.

1   44. The system of claim 42 wherein the substitute data is encrypted data derived

2   from the protected digital image data using an encryption algorithm.

1   45. A method for protecting digital images distributed over a network,

2   comprising the steps of:

3   receiving a request from a client computer;

4   submitting the request to a server computer;

5   receiving an original layout page containing references to digital images therein

6   from the server computer;

7   parsing the original layout page for the references to digital images;

8   generating a modified layout page from the original layout page by replacing at

9   least one of the references to digital images in the original layout page with

10   references to substitute data; and

11   sending the modified layout page to the client computer.

1   46. The method of claim 45 further comprising the steps of:

2   appending an identifier to the request;

3   authenticating the request based on the identifier; and

4   removing the identifier from the request.

1   47. The method of claim 46 further comprising the step of randomly generating

2   the identifier.

1   48. The method of claim 45 further comprising the step of dynamically

2   generating the original layout page.

1   49. The method of claim 45 wherein the layout page is a hyper-text markup

2   language (HTML) page.

1   50. The method of claim 45 wherein the layout page is an extended markup

2   language (XML) page.

1   51. The method of claim 45 wherein the layout page is an active server page

2   (ASP).

1   52. The method of claim 45 wherein said parsing step comprises the steps of:

2   locating tags within the layout page indicating references to digital images; and

3   identifying protection status of the digital images, based on information in a

4   protection status database.

1   53. The method of claim 45 wherein said parsing step comprises the steps of:

2   locating tags within the layout page delimiting protected parts of the layout

3   page;

4   extracting references to digital images within the protected parts of the layout

5   page; and

6   identifying protection status of the digital images, based on information in a

7   protection status database.

1   54. The method of claim 45 wherein the substitute data is pre-defined image

2   data.

1   55. The method of claim 46 further comprising the step of deriving the

2   substitute data from the digital images.

1　　56.　The method of claim 55 wherein the substitute data is watermarked data

2　derived from the digital images.

1　　57.　The method of claim 55 wherein the substitute data is encrypted data

2　derived from the digital images using an encryption algorithm.

1　　58.　The method of claim 45 wherein at least one of the references to digital

2　images is a reference to an alias for a protected digital image.

1　　59.　The method of claim 58 further comprising the step of looking up a file name

2　for the protected digital image, corresponding to the alias for the protected digital

3　image.

1　　60.　The method of claim 58 wherein the protected digital image resides on a

2　remote computer.

1　　61.　The method of claim 60 further comprising the step of looking up an address

2　for the remote computer and a file name for the protected digital image, corresponding

3　to the alias for the protected digital image.

1　　62.　The method of claim 61 further comprising the steps of:

2　requesting protected digital image data from the remote computer, using the

3　　address for the remote computer and the file name for the protected digital

4　　image; and

5　receiving protected digital image data from the remote computer.

1　　63.　The method of claim 62 further comprising the step of deriving the

2　substitute data from the protected digital image data.

1   64. The method of claim 63 wherein the substitute data is watermarked data

2 derived from the protected digital image data.

1   65. The method of claim 63 wherein the substitute data is encrypted data

2 derived from the protected digital image data using an encryption algorithm.

1   66. A system for protecting digital images distributed over a network,

2 comprising:

3   a receiver receiving a request from a client computer and receiving an original

4   layout page containing references to digital images therein from a server

5   computer;

6   a transmitter submitting the request to the server computer and sending a

7   modified layout page to the client computer;

8   a layout page parser parsing the original layout page for the references to digital

9   images; and

10   a layout page generator generating the modified layout page from the original

11   layout page by replacing at least one of the references to digital images in the

12   original layout page with references to substitute data.

1   67. The system of claim 66 further comprising:

2   a request modifier appending an identifier to the request and removing the

3   identifier from the request; and

4   a request authenticator authenticating the request based on the identifier.

1   68. The system of claim 67 further comprising an identifier generator randomly

2 generating the identifier.

1   69.   The system of claim 66 further comprising an interpreter dynamically

2   generating the original layout page.

1   70.   The system of claim 66 wherein the layout page is a hyper-text markup

2   language (HTML) page.

1   71.   The system of claim 66 wherein the layout page is an extended markup

2   language (XML) page.

1   72.   The system of claim 66 wherein the layout page is an active server page

2   (ASP).

1   73.   The system of claim 66 wherein said layout page parser comprises:

2   a tag locator locating tags within the layout page indicating references to digital

3   images; and

4   a protection status detector identifying protection status of the digital images,

5   based on information in a protection status database.

1   74.   The system of claim 66 wherein said layout page parser comprises:

2   a tag locator locating tags within the layout page delimiting protected parts of

3   the layout page;

4   a digital image detector extracting references to digital images within the

5   protected parts of the layout page; and

6   a protection status detector identifying protection status of the digital images,

7   based on information in a protection status database.

1   75.   The system of claim 66 wherein the substitute data is pre-defined image

2   data.

1   76. The system of claim 66 further comprising a data processor deriving

2   substitute data from the digital images.

1   77. The system of claim 76 wherein the substitute data is watermarked data

2   derived from the digital images.

1   78. The system of claim 76 wherein the substitute data is encrypted data derived

2   from the digital images using an encryption algorithm.

1   79. The system of claim 66 wherein at least one of the references to digital

2   images is a reference to an alias for a protected digital image.

1   80. The system of claim 79 further comprising a file name index containing a file

2   name for the protected digital image corresponding to the alias for the protected digital

3   image.

1   81. The system of claim 79 wherein the protected digital image resides on a

2   remote computer.

1   82. The system of claim 81 further comprising an address and file name index

2   containing an address for the remote computer and a file name for the protected digital

3   image, corresponding to the alias for the protected digital image.

1   83. The system of claim 82 wherein said transmitter requests protected digital

2   image data from the remote computer, using the address for the remote computer and

3   the file name for the protected digital image, and wherein said receiver receives

4   protected digital image data from the remote computer.

1   84.   The system of claim 83 further comprising a data processor deriving

2   substitute data from the protected digital image data.

1   85.   The system of claim 84 wherein the substitute data is watermarked data

2   derived from the protected digital image data.

1   86.   The system of claim 84 wherein the substitute data is encrypted data derived

2   from the protected digital image data using an encryption algorithm.